

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(Original)** A process of increasing bone density in a mammalian patient suffering from a pathological condition in which bone density is decreased which comprises inhibiting the formation of a tertiary complex of IL-11, IL-11R, and gp130.
2. **(Original)** The process of claim 1 which comprises administering to the patient an effective amount of a substance which inhibits, *in vivo*, the formation of a tertiary complex of IL-11, IL-11R, and gp130.
3. **(Original)** The process of claim 2 wherein the pathological condition is postmenopausal bone loss.
4. **(Original)** The process of claim 2 wherein the substance is a mutant IL-11R.
5. **(Original)** The process of claim 4 wherein the substance is a mutant IL-11R with at least one mutation in its gp130 binding region.
6. **(Original)** The process of claim 5 wherein the substance is a mutant IL-11R having at least one of the following mutations: D282 → G282, A283 → D283, G286 → D286, H289 → Y289, and V291 → L291.
7. **(Original)** The process of claim 6 wherein the substance is a mutant IL-11R having the mutation H289 → Y289.
8. **(Original)** The process of claim 4, wherein the substance is a soluble mutant IL-11R.
9. **(Original)** The process of claim 8 wherein the mutant IL-11R is a human IL-11R.
10. **(Original)** The process of claim 2 wherein the substance is an anti IL-11 antibody.
11. **(Original)** The process of claim 2 wherein the substance is an IL-11 binding peptide.

12. **(Original)** The process of claim 11 wherein the substance is an IL-11 binding peptide having an amino acid sequence which specifically binds IL-11 in the region normally bound by IL-11R.
13. **(Original)** The process of claim 12 wherein the substance is a peptide comprising the sequence Arg Arg Leu Arg Ala Ser Trp.
14. **(Original)** The process of claim 2 wherein the substance is a small molecule.
15. **(Original)** The process of claim 2 wherein the substance is an IL-11 antagonist.
16. **(Original)** The process of claim 2 wherein the substance is an IL-11R binding peptide.
17. **(Original)** The process of claim 2 wherein the substance is an anti IL-11R antibody which inhibits interactions between IL-11 and the IL-11R.
18. **(Original)** The process of claim 2 wherein the substance is an anti IL-11R antibody which inhibits interactions between IL-11R and gp130.
19. **(Original)** The process of claim 2 wherein the substance is an effective amount of transcribable genetic material which causes inhibition of the formation of the tertiary complex of IL-11, IL-11R, and gp130.
20. **(Original)** The process of claim 19 wherein the transcribable genetic material encodes an RNA sequence capable of inhibiting the translation of a component necessary to the formation of the IL-11 / IL-11R / gp130 tertiary complex.
21. **(Original)** The process of claim 20 wherein the transcribable genetic material comprises DNA encoding an RNA sequence complementary to IL-11 mRNA.
22. **(Original)** The process of claim 20 wherein the transcribable genetic material comprises DNA encoding an RNA sequence complementary to IL-11R mRNA.
23. **(Original)** The process of claim 20 wherein the transcribable genetic material comprises DNA encoding an RNA sequence complementary to gp130 mRNA.

24. **(Original)** The process of claim 19 wherein the transcribable genetic material comprises DNA encoding an amino acid sequence capable of inhibiting the formation of the IL-11 / IL-11R, gp130 tertiary complex.
25. **(Original)** The process of claim 24 wherein the transcribable genetic material encodes an IL-11R mutated to inhibit binding to gp130.
26. **(Original)** The process of claim 24 wherein the transcribable genetic material encodes an IL-11 binding peptide.
27. **(Original)** The process of claim 19, wherein the level of transcription of the transcribable genetic material is dependant on the concentration of an inducing compound.
28. **(Original)** The process of claim 1, in which the patient is a human.
- 29-33. **(Canceled)**
34. **(Original)** A composition of matter comprising an IL-11 binding peptide.
35. **(Original)** The composition of claim 34 wherein the IL-11 binding peptide comprises the sequence Arg Arg Leu Arg Ala Ser Trp.
36. **(Original)** The composition of claim 34 wherein the IL-11 binding peptide comprises the sequence Arg Arg Leu His Ala Ser Trp.
37. **(Original)** The composition of claim 34 wherein the IL-11 binding peptide comprises the sequence Arg Arg Leu X Ala Ser Trp, and X is a basic amino acid.
38. **(Original)** The composition of claim 34 wherein the IL-11 binding peptide comprises the sequence Ser Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro Gly Tyr Pro.
39. **(Original)** The composition of claim 34 wherein the IL-11 binding peptide comprises the sequence Ser Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro Ser Tyr Pro.

40. **(Original)** Use of the peptide of claims 34 in reducing the formation of a tertiary complex of IL-11, IL-11R and gp130.
41. **(Original)** Use of the peptide of claim 34 in the purification of IL-11.
42. **(Original)** Use of the peptide of claim 34 in the depletion of IL-11 from a solution.
43. **(Original)** A composition of matter for the selective binding of IL-11 comprising the peptide of claim 34 suitably immobilized on an appropriate substrate.
44. **(Original)** A composition of matter comprising an IL-11R binding peptide.
45. **(Original)** Use of an antibody which specifically binds the IL-11R and blocks interactions between IL-11 and IL-11R in the preparation of a medicament for use in increasing bone density in a mammalian patient.
46. **(Original)** Use of an antibody which specifically binds the IL-11R and blocks interactions between gp130 and IL-11R in the preparation of a medicament for use in increasing bone density in a mammalian patient.
47. **(Original)** The use of the TRAP assay in identifying IL-11 antagonists.
48. **(Original)** The use of the bone marrow formation assay in identifying IL-11 antagonists.
49. **(Original)** A process of increasing bone formation while decreasing bone resorption in a mammalian patient, which comprises inhibiting the formation of a tertiary complex of IL-11, IL-11R and gp130.